

REMARKS

The Official Action rejects Claims 1, 4 and 5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,305,344 to Rushikesh M. Patel.¹ The Official Action also rejects Claims 2 and 3 under 35 U.S.C. § 103(a) as being obvious over the Patel '344 patent in view of U.S. Patent No. 5,495,490 to Robert R. Rice, et al. As described below, independent Claim 1 has been amended to further patentably distinguish the claimed invention from the cited references, taken either individually or in combination. The preamble of dependent Claims 2-5 has also been amended for purposed of consistency.

The Official Action also raises an obviousness-type double patenting rejection relative to Claims 1-10 of U.S. Patent No. 6,724,792 to Robert R. Rice, et al. A Terminal Disclaimer is submitted herewith, thereby overcoming the obviousness-type double patenting rejection. In view of the foregoing amendments, the submission of the Terminal Disclaimer and the following remarks, Applicant respectfully requests reconsideration of the application and allowance of the claims.

Independent Claim 1 recites a method of replacing a linear laser diode bar of a laser diode array by, among other steps, "slidably removing the removable linear laser diode bar from between the respective pair of spacers in the laser diode array without breaking a mechanical connection between the removable linear laser diode bar and the respective pair of spacers." (Emphasis added) The Official Action contends that the Patel '344 patent discloses this step with reference to column 2, lines 56-68. In this regard, the Patel '344 patent describes the removal of individual laser submounts "by reflowing the solder layer (74, 75, 76 and 77) by raising the temperature of the array to one above the melting point of the solder" As such, the laser submounts, which are otherwise secured in respective channels defined by the substrate by the solder layer, are released by heating the laser array so as to reflow the solder.

Since the laser submounts of the Patel '344 patent are mechanically connected within channels defined by the substrate by the solder layer during operation of the laser array and

¹ The Official Action actually refers to the Patel reference as U.S. Patent No. 6,151,341; a patent to Douglas J. Bull, et al. which was discussed during the prosecution of the parent application. Based on the reference to Patel as the inventor, the description and corresponding reference numbers utilized by the Official Action and the citation by the Examiner of U.S. Patent No. 5,305,344 to Rushikesh M. Patel in form PTO-892, it is believed that the Patel reference is actually U.S. Patent No. 5,305,344 and the Patel '344 patent is therefore discussed herein.

further since the mechanical connection of the laser submounts to the substrate that is provided by the solder layer must be released by reflowing the solder layer in order to remove the laser submount, the Patel '344 patent does not, in fact, teach or suggest "slidably removing the removable linear laser diode bar from between the respective pair of spacers in the laser diode array without breaking a mechanical connection between the removable linear laser diode bar and the respective pair of spacers" (emphasis added), as alleged by the Official Action in conjunction with the rejection of Claim 1. In this regard, the release of the mechanical connection provided by the solder layer by reflowing the solder layer is just as much of a "break" of a mechanical connection as if sufficient force was applied to the laser submount to fracture the solder layer and separate the laser submount from the substrate since the mechanical connection that was previously provided by the solder layer is released by applying heat to reflow the solder layer.

In order to further patentably distinguish the claimed invention from the Patel '344 patent and consistent with the present application including at least page 11, line 23 - page 12, line 6 of the specification, independent Claim 1 has also been amended to also recite:

slidably inserting and securing the replacement linear laser diode bar between the respective pair of spacers without creation of a mechanical connection therebetween; and
electrically activating the replacement linear laser diode bar while the replacement linear laser diode bar remains secured between the pair of spacers without the creation of a mechanical connection therebetween.

In contrast, the Patel '344 patent described the insertion of a replacement laser submount while the solder remains heated and, therefore, reflowed. See column 2, lines 61-62. Thereafter, the temperature is lowered (see column 2, line 63) such that the solder layer solidifies in order to establish a mechanical connection with the replacement laser submount as shown in Figure 6 and the corresponding description of the Patel '344 patent. The laser submounts then remain secured to the substrate via a mechanical connection established by the solder layer during subsequent operation of the laser array as also shown in Figure 6 and the corresponding description of the Patel '344 patent.

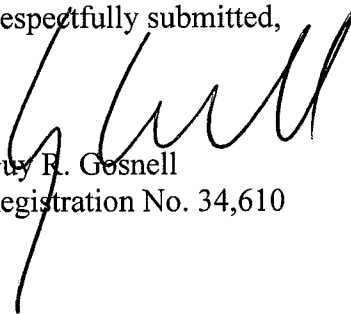
Thus, the Patel '344 patent does not teach or suggest a method of replacing a linear laser diode bar from a laser diode array as set forth by amended independent Claim 1 for each of the foregoing reasons. The secondary reference, i.e., the Rice '490 patent, also fails to teach or suggest at least the steps of amended independent Claim 1 of slidably removing the removable linear laser diode bar from between the respective pair of spacers without breaking a mechanical connection therebetween, slidably inserting and securing the replacement linear laser diode bar between the respective pair of spacers without creation of a mechanical connection therebetween, and electrically activating the replacement linear laser diode bar while the replacement linear laser diode bar remains secured between the pair of spacers without the creation of a mechanical connection therebetween. And, in fact, the Rice '490 patent was not cited for such a teaching or suggestion. Since both references fail to teach or suggest these same steps of amended independent Claim 1, any combination of the cited references also fails to teach or suggest the method amended independent Claim 1 for at least the same reasons set forth above. Accordingly, it is respectfully submitted that the rejections of Claims 1-5 under 35 U.S.C. § 102(b) and 103(a) are overcome.

CONCLUSION

In view of the amended claims, the submission of the Terminal Disclaimer and the remarks presented above, Applicant submits that the claims are in condition for immediate allowance. As such, the issuance of a Notice of Allowance is respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicant's undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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